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An Assessment of FISP e-voucher Performance

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Abstract:

The failure of the agricultural sector to provide livelihoods for people in rural areas is considered a major factor that contributes to rural poverty and food insecurity. The Zambian government started the Farmer Input Support Program (FISP) in 2002 in order to stimulate the growth of the agricultural sector and to improve the performance of the smallholders. However, the administration of the FISP manual system has had challenges resulting in high operational cost and/or decimal impact on smallholder performance and graduation.

In order to mitigate the FISP challenges, the FISP Electronic Voucher system was introduced in 2015/2016 farming season. The E-voucher system has been in operation for the past two farming seasons and conflicting reports for its successes and failures have been reported in Zambian's daily papers as well as published research articles. This study had been undertaken in order to assess the performance of the E-voucher system by hearing from smallholders.

A survey research was undertaken using structured and semi structured questionnaires. The stallholders in Kabwe were targeted and the findings revealed that the e-voucher system was largely successful, but required more improvement in input some areas such as on time release of funds to e-voucher holders, improve availability of agro-dealer input stocks and designing a proper e-voucher exit strategy.

1. Introduction and Background

1.1. Introduction

The successive National Agriculture Policies for the Ministry of Agriculture have consistently recognized the importance of agriculture to the poor majority and have stressed the significance of agriculture to the Zambian economy and the people. Pick up any food policy statement, agricultural development strategy, or national economic development plan produced in Zambia for the past 40 years, and almost surely, the first sentence will read something like “agriculture is the mainstay of the economy,” or “agriculture is the economic backbone of the country.” These documents set out in detail actions for the government of the day to do for agriculture because of what agriculture could or should do for the country (NAIP, 2013, p. 4).

The National Agriculture Policy (NAP 2004, p. 2; NAP, 2012) states that, Agricultural Sector is key to the development of the Zambian economy and will be the engine of growth for the next decade and beyond. Agriculture generates between 18 - 20% of the Gross Domestic Product (GDP) and provides livelihood for more than 50% of the population. The sector absorbs about 67% of the labor force and remains the main source of income and employment for rural women who constitute 65% of the total rural population. Increase in rural incomes will therefore result in overall poverty reduction and increased food security. It further states that smallholder farming represents a large potential resource for increased agricultural production and poverty reduction.

However, achieving these goals – increased agriculture production & productivity, higher rural income, reduced poverty, & food security – requires enabling institutions, programs and conducive policy environment. Among the key programs, the **Electronic Voucher System** (e-voucher system), which is the focus of this study, is examined. The e-voucher system is an innovation under the **Farmer Input Supply Program** (FISP).

The FISP started in 2002/2003 season. This program was primarily designed to address the declining crop production, especially maize, following a succession of droughts and flood season that Zambia experienced. The calamities diminished asset base for many smallholders and FISP was started in order to finance crop production, ensure domestic food security and income. The FISP specific objectives were; to expand markets for agro-dealers and increase their involvement in the distribution of agricultural inputs in rural areas while reducing the direct role of the government and to increase competitiveness and transparency in the supply and distribution of inputs and serve as a risk sharing mechanism for smallholders. However, FISP experienced several challenges that hindered its

successful implementation, the major one being the failure for farmers to graduate out of the program. The initial design of the programme intended that the beneficiaries graduate every two years. However, none of the farmers have graduated since its inception (Mofya-Mukuka et al.,)

In order to mitigate the FISP challenges, the e-voucher system was introduced and implemented by the MAL in 2015/2016 farming season. The e-voucher system targets a pre-determined list of beneficiaries from each district in Zambia. The Ministry along with the Food, Agriculture Agencies (FAA) selects eligible farmers for input into Electronic Voucher Database that is managed by Mobile Transaction Zambia Limited (MTZL) as shown in figure 1.

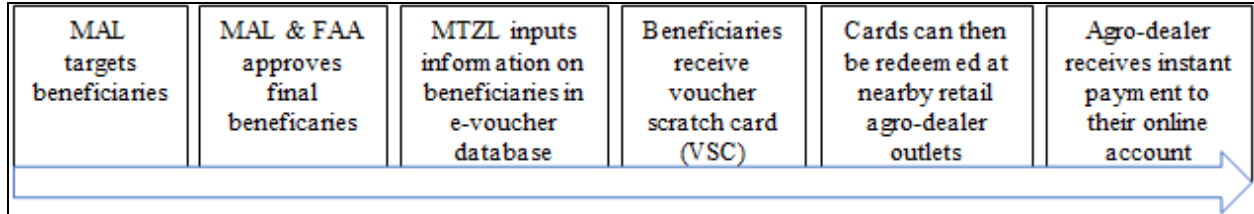


Figure 1: The process of implementing e-voucher system

The e-voucher is a government payment card given to the cardholder – the smallholder in this case – the prepaid card provides the cardholder with access to the agricultural input supply of their choice up to the allotted amount. The cardholder can go to any approved Agro-input supply dealer and purchase the goods by simply swiping on an electronic machine to pay for the goods. The card enables a cardholder to receive funds from the government into his/her account they control and access funds as they would with any “regular” bank account.

The e-voucher is expected to lower the Treasury expenditure on FISP. The program was designed to leverage on the private sector, participation in input distribution, thereby, eliminating many of the costs that are currently by the government. The factors that contribute to frequent delays in distributing FISP inputs to farmers are corruption in the distribution process and inefficiencies in the planning, tendering, and procurement (The World Bank, 2010). By eliminating the need for tendering, as well as delegating input distribution to the private sector, the e-vouchers have the potential to reduce delays in input distribution. For Lungu-Jere (2015), the e-voucher system under FISP has potential to reduce costs, streamline operations, better serve the smallholders, increase control and transparency, improve security, have access to reporting and analytics, and have the capacity to distribute funds quickly. The smallholders benefit through the convenience and ease of use, flexibility and enhanced security, and access to payment services if not banked.

According to IAPRI Policy Brief No. 59, the Camp Agricultural Committee (CAC) selects farmer beneficiaries. The beneficiaries should: i) be members of a cooperative or other farmer organization; ii) be smallholder farmers within the camp coverage area; iii) have up to 5 ha of land and the ability to cultivate at least 1 ha of land; iv) Have the capacity to pay the initial payment (i.e., the farmer contribution to FISP); v) not be concurrently benefiting from the Food Security Pack Programme; and vi) not be a defaulter from the Food Reserve Agency (FRA) and/or any other agricultural credit programme. The characteristics of farm sizes in Zambia are indicated in table 1.

Characteristics	Small scale	Emergent	Medium scale	Large scale
Number of farmers	459,000	119,200	25,230	740
Area per holding (hectares)	0.5-9.0	10-20	20-60	>60
Crops grown	Food crops	Food/Cash crops	Food/Cash crops	Cash crops
Production focus	Subsistence	Commercial/Subsistence	Commercial/ Subsistence	Commercial
Sources: MoAC: Agriculture Bulletin 2000. From MOFED (2002).				

Table 1: Characteristics of farm sizes in Zambia

The major advantages and disadvantages of e-voucher compared to FISP that have been abstracted from articles and policy documents, quoted in this study, are tabulated in table 2.

E-voucher	FISP
+ve Potential cost savings	-ve Beneficiary targeting – how it is applied
+ve Quick input delivery	-ve The failure to successfully target poor farmers
+ve Private sector participation (crowding-in private agro-dealers) & development	-ve Delays in input distribution
+ve Crop diversification & input use	-ve Poor fertilizer use efficiency among beneficiary farmers
-ve Lost or stolen electronic cards	-ve Leakages, whereby inputs intended for are diverted & resold
-ve Bias during beneficiary selection	-ve Lack of exit strategy for weaning off beneficiaries
-ve Inability of selected agro-dealers to maintain a constant supply	-ve Crowding out of private sector fertilizer purchases & suppliers
-ve Delay in the redemption of inputs owing to network failure	

Table 2: Advantages & disadvantages of e-voucher system compared to FISP

Source: abstracted from (Sitko et al., 2012; MAL, 2015; Kuteya et al., 2016; World Bank, 2010; IAPRI PolicyBrief, Mason et al., 2013)

Essentially, this study has been undertaken in order to hear the feelings of beneficiaries concerning the advantages (+ve) of the e-voucher system in table 2 and whether the inherent disadvantages (-ve) in the table are kept to the minimum. Consequently, the success of the e-voucher system hinges on maintaining the positive variables (+ve) and minimizing the negative variables (-ve). Otherwise, if the positive variables are not achieved or felt, by the beneficiaries, the innovation would be deemed to have failed in mitigating the FISP challenges (-ve) in table 2.

1.2. Background

Poverty continues to be the greatest challenge Zambia is facing. The average national poverty level is estimated at 64%, while in rural areas it is at 80% (Living Conditions, Monitoring and Surveys - LCMS, 2006). The highest levels of poverty are in the rural areas and agriculture is the most important economic activity that provides livelihood and income for most rural communities. The support of the agricultural sector has been identified as a priority by the government and the rural communities to reduce poverty and enhance household security. Consequently, the Zambia's National Development Plans place the agricultural sector high on the agenda as the potential engine for economic growth required to reduce poverty (SNDP, 2011 – 2015).

The failure of the agricultural sector to provide livelihoods for people in rural areas is considered a major factor that contributes to rural poverty and food insecurity. Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996)¹.

Broad ranges of policy reforms, institutional frameworks and programs in the agricultural sector have been introduced to stimulate growth and improve the performance of the agricultural sector in Zambia. These reforms included land reforms, fertilizer and crop market reforms that allow the private sector to participate in the input supply and crop marketing, while reducing government participation (Kalinda et al., 2003). The Zambian government introduced the Fertilizer Support Program (FSP) in 2002, later renamed the Farmer Input Support Program (FISP), in order to counter the challenges that farmers faced (Kalinda et al., op.cit; IAPRI, 2006; Kuteya et al., 2016; MAL, 2015). The FISP program was aimed at increasing the supply of agricultural inputs to smallholder farmers and contributes to increased household food security and income. FISP specific objectives were to expand markets for agro-dealers and increase their involvement in the distribution of agricultural inputs in rural areas; to reduce the direct role of government; to increase competitiveness and transparency in the supply and distribution of inputs; and to serve as a risk sharing mechanism for smallholders.

However, FISP experienced several challenges that hindered its successful implementation, the major one being the failure of farmers to graduate out of the program. The initial design of the program intended that beneficiaries graduate every two years, however none of the farmers, have graduated, since its inception. *The failure to graduate should not be seen as a surprise because there was no sustainable built-in exit strategy in the initial design except for the intent.*

On account of not having a sustainable exit strategy since the FISP inception in 2002/2003 farming season, figures 3 & 4 shows increasing numbers of distributed subsidized fertilizers and beneficiaries respectively without exiting beneficiaries.

¹www.fao.org/docrept/003/w361e/w3613e00.htm

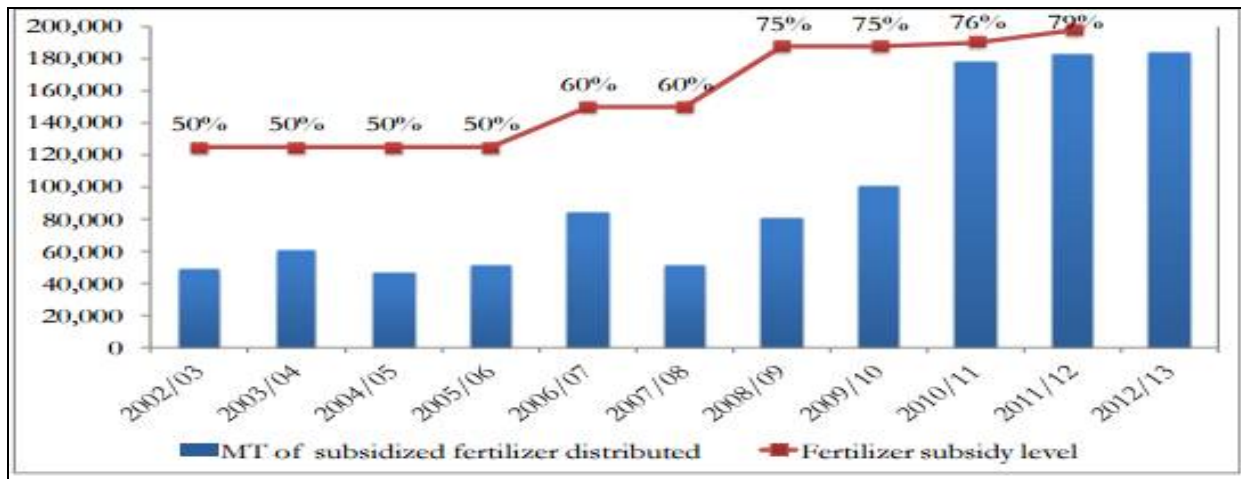


Figure 3: Distributed subsidized fertilizer
Source: IAPRI No. 59, p. 3

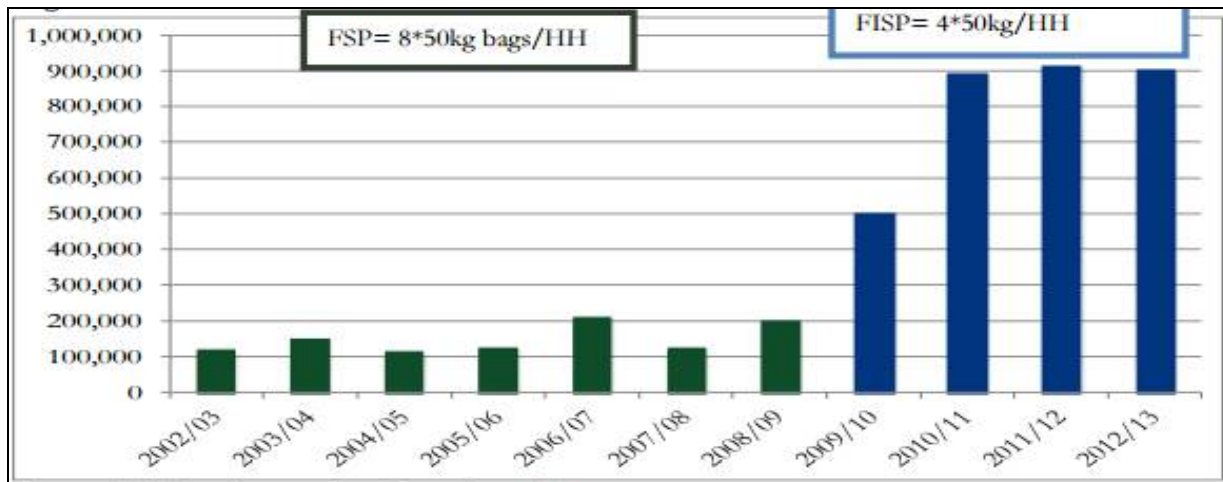


Figure 4: FISP beneficiaries
Source: IAPRI No. 59, p. 3

Consequently, the costs for disbursing the program have equally been increasing enormously and at the expense of other more beneficial agri-programs, Mofya-Mukuka et al., (, p.5). The implications of dedicating a large portion of the agricultural budget to FISP are that it severely limits the available funds for other critical MAL programs that drive agricultural growth for smallholders such as rural roads, irrigation, agricultural research and development, and education (Fan et al., 2008; Economist Intelligence Unit, 2008).

To mitigate the challenges that FISP experienced, the e-voucher system was introduced. The e-voucher system implemented by the MAL targets a pre-determined list of beneficiaries from each district in Zambia. The Ministry along with the Food, Agriculture Agency (FAA) selects eligible farmers for input into Electronic Voucher Database managed by Mobile Transaction Zambia Limited (MTZL). The diagram below outlines the process of implementing the e-voucher system.

1.3. Problem Statement

Poverty continues to be the greatest challenge Zambia is facing. Unlocking the smallholder agricultural development potential is critical for poverty reduction, food security and nutrition for Zambia. The costs for managing the FISP have been escalating since its inception and many experts have advised that the funds could be utilized in other agricultural projects with better impact. Under FISP, input supply had been problematic for smallholders, thus FISP e-voucher system is an innovation that has been introduced to mitigate many of the FISP problems such as those in table 1.

1.4. The Research Objective

To assess the performance of the FISP e-voucher system in Kabwe district, Mpima block (Semine camp) and Waya block (Waya camp).

1.5. Research Questions

What are the smallholders saying or feeling about the e-voucher; what benefits has it brought?

1.6. Scope

This study envisages assessing the success of the e-voucher system from the beneficiary's point of view. The study endeavors specifically to elicit the smallholder's feelings about e-voucher system and services. The study was done in Kabwe, Mpima block (Semine camp) and Waya block (Waya camp).

1.7. Justification of Study

The policy makers will be able to get a feedback or feelings from the smallholders, for whom the e-voucher system was designed. The smallholder positive, negative feedback, or feelings about FISP e-voucher system would serve as an indicator of how successful or unsuccessful the implementation has gone since its implementation in 2016/17 farming season. Similarly, the feedback or feelings would provide a measure of how beneficial or not the e-voucher is to the smallholders. This information is important to the implementers of the e-voucher system. It serves as a pro-active measure to keep on improving the system in light of what people say. The findings and recommendations from this study will help policy makers to fine-tune the program so that it can achieve greater impact. It will help the implementers avoid obvious mistakes. The study will also help to add knowledge to e-voucher system success stories.

2. Literature Review

2.1. Introduction

In this study, a review of current literature on FISP, and E-voucher system is important for understanding what FISP is all about and the role of E-voucher system. The E-voucher system performance in other countries would also shed light on what is expected in Zambia as well as knowing the success and failures or challenges. Similarly, reviewing the current national agricultural policies in to know how they have affected smallholders for which the e-voucher system endeavors to assist is important. The agriculture investment plan NAIP 2014-2018 would give information on FISP and E-voucher.

2.2. Farmer Input Support Programs

The ministerial statement of agriculture and livestock given by Honourable Given Lubinda on the preparedness of the farmer input support program (FISP) for the 2015/16 agricultural season mentioned that the government designed the then fertilizer support programme (FSP) which was later renamed the FISP in 2002. The aim of the programme was to improve resource access (inputs) to poor smallholder farmers and to enhance the participation and competitiveness of the private sector in the supply and distribution of agricultural inputs (MoAI, 2015). The Minister addressed the Parliament that FISP would support a total number of 759, 00 small scale farmers in 2015/16 farming season while the e-voucher system under FISP would target 241, 000 small-scale farmers in 13 districts. Thus, bringing the total number of beneficiaries to 1,000,000 farmers. The districts in which the e-voucher would be implemented were: Kalomo, Choma, Monze, Mazabuka, Chikankata, Pemba, Chongwe, Mumbwa, Chibombo, Kabwe, Kapiri Mposhi, Ndola; And Chisamba.

In his address, the Minister, mentioned that the e-voucher would be rolled out to other districts in the coming years. The e-voucher would give farmers a wide choice of inputs including livestock and fisheries inputs as part of governments push for agricultural diversification. The inputs will include, among others, veterinary drugs, fertilizers, seeds, fingerlings and fish feed. The e-voucher system would allow farmers to source their inputs directly from agro-dealers instead of government playing an active role in the supply and distribution of inputs (op.cit, p. 4).

The FISP inputs according to the Minister would include: Fertilizer, 214MT; Maize seed, 5987.23MT; Rice seed, 127MT; Sorghum seed 119.1MT; Groundnuts, 1357.1MT, Orange, 77.6MT; Orange Maize, 77.6MT; Soya beans, 776.5MT; Cottonseed, 155.3MT; Bean seed, 232.86MT; and Sunflower, 37.28MT.

Sitko et al., (2012) pointed out that Zambia was in the process of reforming the FISP to implement the subsidy program through a flexible electronic voucher (e-voucher). After years of lobbying by various stakeholders, including the Indaba Agricultural Policy Research Institute (IAPRI) for the government to reform the FISP subsidy program, the Ministry of Agriculture finally launched the e-voucher program as a pilot in thirteen selected districts during the 2015/2016 agricultural season with an initial target of 241,000 smallholder farmers. According to this research, Sitko et al., (op.cit, p.1), FISP was plagued with a number of problems such as:

- Late delivery of inputs; distribution of standardized inputs that may not be appropriate for all agro-ecological zones or soil types; crowding out of the private sector; poor targeting, and; high cost to the government treasury
- The Government of Zambia has yet to pilot an e-voucher system for FISP due to concerns that the private sector in rural Zambia lacks the capacity to effectively provide farmers with inputs and that a failure of FISP would have negative consequences formational food security
- Analysis of existing e-voucher systems in Zambia suggests that e-vouchers can be used to distribute FISP inputs to farmers, particularly in high potential agricultural regions

Sitko et al., (op.cit) claimed that the introduction of e-vouchers for FISP was going to effectively address many of the above listed problems. Similarly, A Civil Society for Poverty Reduction (CSPR) (2005) study findings indicates that the Fertilizer Support Programme has very little impact on the food security and poverty reduction. Income effects cannot adequately address the many household needs that communities in rural areas would like to address. Issues of sustainability and the adequacy of the amount of fertilizers that farmers receive from the programme were raised. The CSPR (op.cit), observed a number of factors impeding the farmer support program, such as:

- Inconsistent supply of inputs and sometimes fertilizers arriving earlier than seed
- Delays in input supply
- Few buyers and poor transport facilities
- Inadequate supply of farm inputs
- Poor marketing arrangements which include delays in payment to farmers for farm Produce during the marketing season
- Lack of or non-use of satellite depots
- Poor record keeping of the fertilizer applicants and delivery records
- High input prices and low prices for farm produce, and
- Lack of monitoring and evaluation of the programme.

Additionally, Mason et al., (2013) undertook a study to review the design and implementation of FISP and other GRZ input subsidy programs since structural adjustment. The empirical evidence was drawn mainly from analyses of two nationally representative surveys of smallholder farm households in Zambia –the Supplemental Survey (SS), a three-wave panel covering three agricultural years 1999/2000, 2002/03, and 2006/07 and the 2012 Rural Agricultural Livelihoods Survey(RALS), which covered the 2010/11 agricultural year. The objective to undertake this study was to analyse the targeting and the effects of FISP (Mason et al., op.cit, p. v). The study findings on *targeting* was significant political economy dimensions to FISP fertilizer. For example, the households in constituencies won by the ruling party received significantly more subsidized fertilizer than those in areas lost by the ruling party. Similarly, the larger the landholding size, the more quantity of subsidized fertilizer a smallholder acquired as well as livestock holdings; while the further one was away from the towns the less subsidized fertilizer they received. Thus, FISP was disproportionately allocated to better-off households above \$1.25/day poverty line in 2010/11 year. The use of an electronic voucher (e-voucher) system has the potential to improve targeting of beneficiaries.

According to Sitko *et al.*, (2012), the e-voucher could improve monitoring of the program because under such a system:

- Individual beneficiaries are linked electronically to an e-voucher through their national registration card (NRC) numbers
- Beneficiaries personally present their NRC and e-voucher to the agro-dealer where the voucher is being redeemed, and
- The agro-dealer enters the NRC number and a reference pin into the system.

Sitko et al., (op.cit) argues that the system could be designed to prevent individuals from redeeming a given voucher at multiple times. It could also be designed to ensure that the same individual should not redeem vouchers after three consecutive years, thus aiding in the process of graduation.

Regarding the *impacts* of the subsidy programs, results suggest that the FISP program exhibits a significant degree of crowding out of commercial purchases of hybrid maize seed and fertilizer. For example, subsidized inputs were generally targeted to relatively better off households who could afford the inputs at commercial prices. Therefore, private suppliers of fertilizer were pushed out of the market. The crowding out effect was generally lower among female-headed households and in areas where the private sector was less active in agro-input retailing.

The study also examined the impacts on *smallholder crop production* and showed that an increase in the quantity of subsidized fertilizer acquired by a smallholder household raised its maize area planted, yields, and output. It had no effect on the area planted to other crops, but has positive spill over effects on its yields and production of other crops; and a negative effect on its area under fallow. However, these effects were generally small in magnitude.

2.3. How the Electronic Voucher System Operates?

The e-voucher system, according to Kuteya et al., (2016), uses a mobile delivery and tracking system to distribute subsidized products through private-sector suppliers to targeted farmers. It is a web-based, real time registration, and electronic payment system, using mobile phones, to retail agents who distribute inputs. The beneficiaries are targeted just like under the FISP system. The beneficiaries receive a Voucher Scratch Card (VSC), linked to their specific National Registration Card (NRC) number. The VSC entitles the beneficiary to agricultural inputs and implements of their choice. The cards are redeemed at nearby retail agro-dealer outlets by entering the scratch card number and beneficiary's NRC through their cell phones. On confirmation of the transaction, the agro-dealer receives an instant payment to their online account. Thus, the inputs beneficiary should possess a VSC that is linked to the beneficiary and the retail agro-dealer must have an online bank account for the transaction to take place.

2.4. What Necessitated the Introduction of the e-voucher system

Kuteya et al., (2016) contends that the area of maize production had expanded significantly during the fertilizer subsidy period, but at the expense of huge cost to the treasury and decimal impact on crop yields, market development and poverty reduction. Several studies, the researchers observed, had shown that subsidized fertilizer was disproportionately allocated to wealthier households (Jayne

et al. 2011; Chibwana, Fisher, and Shively 2011; Ricker-Gilbert Jayne, and Chirwa, 2011), crowded-out private sector (ACF, 2009; World Bank, 2010), and had not resulted into economically viable increases in maize production (Mason and Tembo 2015). The other challenge had been the most difficult to quantify subsidized fertilizer because of leakages through diversion and resale before reaching the intended beneficiaries (Mason and Tembo 2015).

Additionally, the researchers (op.cit) pointed out that under the traditional FISP, the private sector had remained constrained in providing input and output marketing services (ACF, 2009; World Bank, 2010). The household's dependence on fertilizer subsidies crowds out commercial fertilizer purchases and affects investments from the private sector, argued the study. Similarly, on agricultural productivity, the traditional FISP fails to recognize the spatial variability of soil fertility and climatic conditions in the country and as a result uses the blanket fertilizer recommendation of *one-size fits all* as the basis for determining the package size, disregarding the comparative advantage of different areas. As a result of this, the government has continued investing heavily in Compound D and Urea fertilizer, though they are not suitable for large parts of the country where soils are acidic.

In this study, Kuteya et al., (op.cit), hoped that the e-voucher would: crowd in more private sector participation in agro-input distribution, thereby reducing public expenditure on the delivery of private goods such as fertilizer and seed; ensure timely delivery and access to inputs by smallholder farmers; allow farmers to choose inputs of their choice thereby promoting agricultural diversification; and reduce leakages and increase the number of beneficiaries

The study, Kuteya et al., (opcit) found that: E-voucher implementation had crowded in more private sector participation in inputs distribution to rural farmers in the initial 13 pilot districts; agro dealers were stocking more diverse inputs in their shops; most farmers reported having access to inputs of their choice on time in nearby agro-dealer shops, though they were a few noticeable delays in e-card activation; about 85% of the farming households redeemed their vouchers for fertilizer and maize seed. The remaining 15% purchased other farm inputs.

Despite these successes, the e-voucher pilot was faced with challenges that threatened the successful implementation of the program. These included the following: delayed submission of beneficiary lists to the Ministry of Agriculture (MoA) Programme Coordinating Office resulting in delayed delivery and activation of e-cards; rising fertilizer prices due to the depreciation of the Kwacha that nearly made the e-voucher less attractive to the traditional Farmer Input Support Programme (FISP). The Government had to top-up the value of the voucher from 1,400 to 2,100 Kwacha, inclusive of farmer's contribution of 400 Kwacha; there were cases in Central Province of deliberate efforts by some MAL staff to derail the implementation of e-voucher pilot in support of the traditional FISP. The MAL's quick action to discipline renegade staff solved the problem; reported selective activation by e-cards, a problem that led to delayed access of inputs by some farmers; reported incidences of farmers surrendering their non-activated cards to agro-dealers to access inputs in advance. This could have led to some farmers losing out as some agro-dealers might have redeemed the cards in the absence of the farmers; the charging of a redemption fee of 7 Kwacha affected some farmers as they could not use the full value of the e-card; and the current e-voucher redemption system does not have the capability of identifying the type of inputs redeemed by farmers. This makes it impossible to map the demand for various inputs.

2.5. Conceptual Framework for e-voucher System

An e-voucher uses a mobile delivery and tracking system to distribute subsidized agricultural inputs through agro-dealers/input suppliers to targeted farmers. Beneficiary farmer's e-card is linked to their specific name and National Registration Card (NRC) number. On confirmation of the transaction, an e-voucher allows instant electronic payment to agro-dealers/input suppliers' online accounts for the inputs redeemed by the farmer (Sitko et al. 2012).

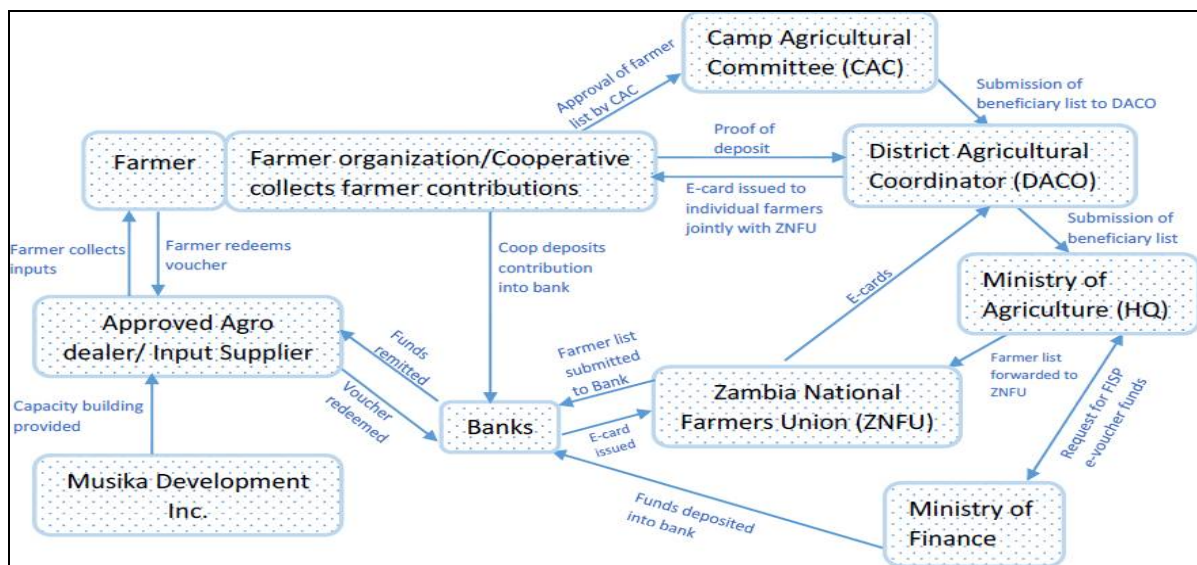


Figure 5: E-voucher Model for implementation

Source: Adapted from the 2015/2016 e-voucher implementation manual with author's modifications

The FISP e-voucher system is implemented by the MAL through the Programme Coordinating Office (PCO). The PCO works both through the provincial (PACO) and district structures (DACO) including Camp Agricultural Committees. Among the functions of the PCO was to create awareness of the e-voucher system to all stakeholders. While DACO's office, through the agricultural camp officers, was responsible for awareness of farmers about the operation of the e-voucher system, Musika was responsible in the creation of awareness and training of agro-dealers/input suppliers. The MAL produced an e-voucher implementation manual that contained detailed information about the program and specific roles for each implementing agent. The MAL implemented the 2015/2016 e-voucher pilot in collaboration with Zambia National Farmers Union (ZNFU). Using their already existing e-VISA card platform, ZNFU facilitated the printing, distribution and activation process of e-cards through the banks. The other implementing agents included agro-dealers and input suppliers who stocked and supplied agricultural, livestock/veterinary and fisheries inputs to farmers. The participating agro-dealers and input suppliers were selected through a consultative process in the pilot districts using an agreed upon criteria. These agro-dealers/ input suppliers were required to acquire Point of Sale machines through their own arrangements with the banks (MAL 2015).

2.6. The Research Gap

To date, the empirical evidence denoting success of the FISP e-voucher system is anecdotal (because based on personal accounts rather than facts or research). The reports in Zambian daily print media on the success of the e-voucher system are mixed. Some claim that the e-voucher is a success story while others say it has failed and that government should revert to the traditional manual FISP system. For example, Fresh Plaza² reports that Zambia's electronic voucher system, under the FISP has failed, and the government is distributing farming inputs as did before. It quoted the, Secretary General of the ruling Patriotic Front, Davies Chama, confirming that the system had failed because e-voucher cards were not ready and those that had been printed had not been verified. He also said some dealers did not have the inputs. "Additionally, the dealers that had the inputs were increasing prices and basically the entire system was not ready" (Itwebafrica.com, 2015 11/10). On the other hand, Mwale Sylvester writing in the All Africa.com³, quoted Coillard Hamusimbi, the head of outreach and member services of the Zambia National Farmers Union (ZNFU) saying that the implementation of the e-voucher system in 13 districts has been successful apart from a few challenges, which is normal in any new programme and that the electronic system was by far better than the conventional way of input distribution which had been embroiled in corruption (All African. Com, 2016, January 22).

There are two recent empirical research that have been undertaken since its implementation in 2015/16 planting season -Kuteya et al., 2016 and IAPRI, 2017. Though the research findings of these studies concerning FISP e-voucher implementation and impact can be viewed, largely, as a success story, except for a few drawbacks reminiscent of a newly introduced program that is still passing through refinement; it is too early to simply say that FISP e-vouchers have been successful already. More empirical studies are needed so that the recommendations thereof help in refining the FISP e-voucher system. Thus, the reason this study has been undertaken in order to hear the feelings of the stakeholder on the e-voucher system.

3. Research Process

3.1. Introduction

The purpose of undertaking this study was to find out what the stakeholders, for whom the e-voucher system was introduced – the smallholders, felt. In order to fulfill this purpose, the study followed a strict scientific methodology concerning research design, research methods, sampling technique, reliability and validity, method of analysis and the limitation to the study. These items are further elaborated case by case in this chapter.

3.2. Research Design

A survey research design was used in this study. It serves a valuable tool for assessing the smallholders' opinion on whether the e-voucher system has been beneficial over the previous FISP manual system. The survey research design is often used because of the low cost and easy accessible information. Survey research is defined as "the collection of information from a sample of individuals through their responses to questions" (Check & Schutt, 2012, p. 160).

3.3. Research Instruments

The study used closed-ended questions where the respondents were asked to agree or disagree with a statement. Additionally, the open-ended questions were used to in order to probe further why the respondent agreed or disagreed with the particular statement. The researcher prepared a standard questionnaire and administered to smallholders who had been registered to use the FISP e - voucher system in Kabwe – Mpima block/Semine camp and Waya block/Waya camp. However, some questionnaires were left with the members of co-operatives in these two camps so that they can give their fellow members to answer.

Survey research can use quantitative research strategies – using questionnaires with numerically rated items, qualitative research strategies – using open-ended questions, or both strategies - mixed methods. Survey research may use a variety of data collection methods with the most common being questionnaires and interviews. Questionnaires may be self-administered or administered by a professional, may be administered individually or in a group (Singleton & Straits, 2009; Checks & Schutt, 2012, p160).

²<http://www.freshplaza.com/article/148887/Zambias-agriculture-e-voucher-failed>

³<http://allafrica.com/stories/201601251376.html>

3.4. Sampling Technique

A non-probabilistic technique was used because the population of e-voucher card holders in Kabwe were not availed. Similarly, locating the e-voucher card holders was not easy. A purposive and convenient sampling technique was used. It was purposive since only e-voucher holders were of interest. It was convenient sampling because the respondents to be interviewed were selected because they happened to be there at the right time and at the right place (Dillman et al., 2009).

The study targeted 65 interviewees, but only 55 people responded. These farmers stay around Mpima and Waya agricultural Camp. The camp officers assisted in the selection of smallholders that were interviewed.

The advantages of convenience sampling are, it's relatively easy to get a sample, it's inexpensive, compared to other techniques, and participants are readily available. However, a large proportion of the population is excluded. This leads to several issues, including: inability to generalize the results of the survey to the population as a whole, the possibility of under- or over-representation of the population, and the underlying reasons why some people choose to take part and some do not can skew the study results (Saunders et al., 2012).

3.5. Validity and Reliability

Reliability is the extent to which repeatedly measuring the same property produces the same result. Ideally, each survey question will mean the same thing to everyone, including those administering the survey. This takes careful design and refinement. The standardized questions that every e-voucher holder was interviewed provided reliability in this study. The validity of this study was achieved by research instrument triangulation whereby the respondents were asked to justify the closed-ended response with an open-ended question.

3.6. Method of Analysis

Descriptive statistics using SPSS were used in order to analyze the responses from closed ended questions while emerging common themes were inferred from the open-ended questions' responses.

3.7. Study Limitations

Limitations were that the study could not use the probability sampling technique that gives every beneficially equal chance to participate in the study. The study didn't cover all the areas covered by e-voucher system and therefore the findings cannot be generalized. However, the findings in these two camps are sufficient to provide evidence for the large-scale survey. Some respondents had difficulties in understanding the question due to limited education and interpretations could not completely solve the problem. The fact that some standard questionnaires were left to camp representatives to give their friends to answer, is in itself a limitation since the quality of assistance in answering cannot be ascertained.

4. Findings and analysis

4.1. Introduction

In the findings section, sometimes called results, the study has reported what the analysis revealed, limited to the factual matter of the results, and not their implication or meaning which are dealt with in the discussions.

4.1.1. Smallholder Gender

The first question asked the respondents to indicate their sex. The data were analyzed by using SPSS and the results are presented in table 3.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	31	55.4	56.4	56.4
	Female	24	42.9	43.6	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 3: Sex

The number of male farmers that were interviewed was higher than the number of female farmers, this is reflected in figure 6 as well as the table 3 (the percentage of males was 55.4% and 43.6% for females).

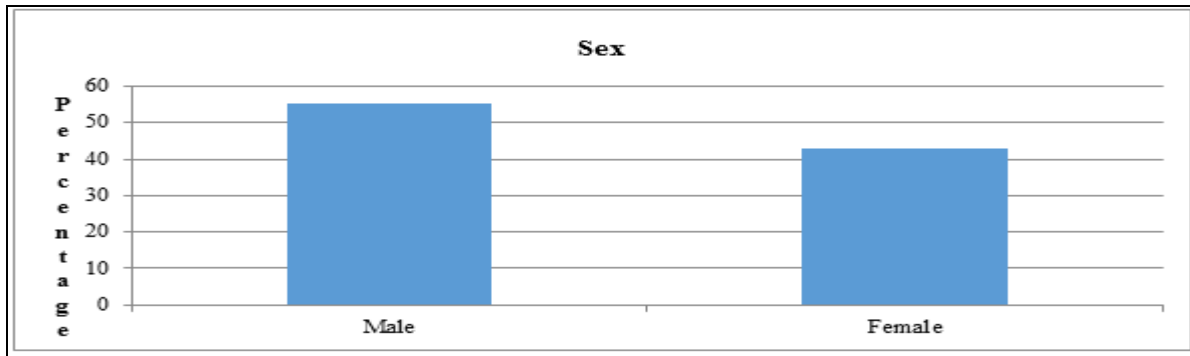


Figure 6: Sex

4.1.2. Level of Education for Smallholders

The interviewees were asked to state the level of their basic and tertiary education and the results are presented in table 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lower primary	6	10.7	10.9	10.9
	Upper primary	11	19.6	20.0	30.9
	Junior Secondary	14	25.0	25.5	56.4
	Senior Secondary	10	17.9	18.2	74.5
	Tertiary	9	16.1	16.4	90.9
	None	5	8.9	9.1	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Table 4: Level of education
Source: Primary data

From table 4, most of the farmers that were interviewed have attained education up to junior secondary level, followed by upper primary school, then senior secondary level, those with tertiary education, lower primary level and then none in that order as shown in figure 7.

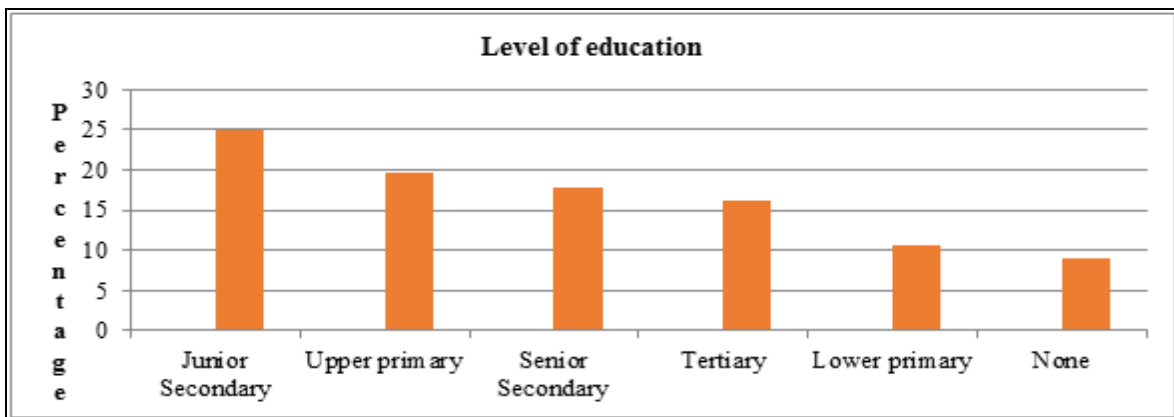


Figure 7: level of education

4.1.3. Age of Smallholder

The respondents were asked to state their age and table 5 revealed how old they were.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-25	8	14.3	14.5	14.5
	26-30	5	8.9	9.1	23.6
	31-35	4	7.1	7.3	30.9
	36-40	3	5.4	5.5	36.4
	41-45	5	8.9	9.1	45.5
	46-50	8	14.3	14.5	60.0
	51-55	5	8.9	9.1	69.1
	56-60	6	10.7	10.9	80.0
	61-65	4	7.1	7.3	87.3
	66-70	5	8.9	9.1	96.4
	71 and above	2	3.6	3.6	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 5: Age

The highest age range, number of farmers interviewed was between 20-25 and 45-50 as shown in figure 8. The least range was 71 and above.

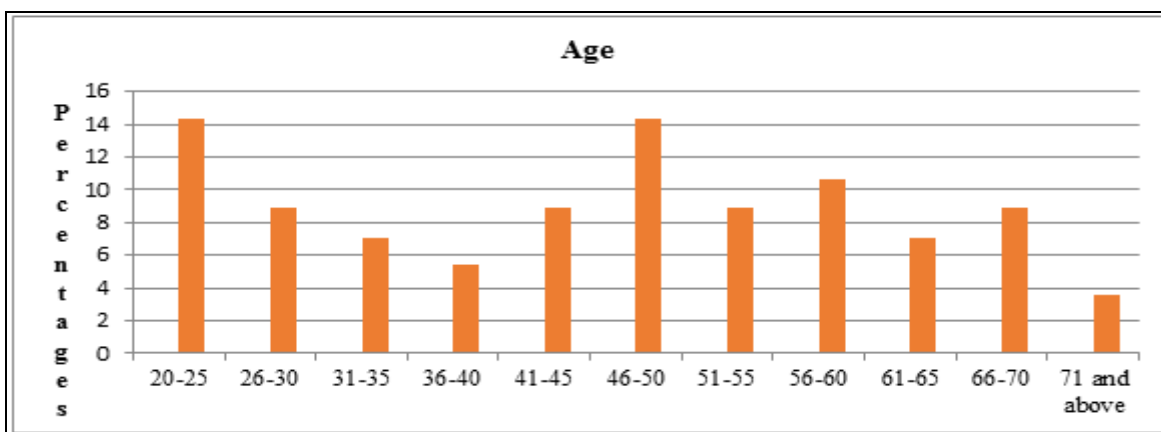


Figure 8: Age

4.1.4. Farm Category

The respondents were asked to state whether the category of their farms and the data was presented in table 6.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Small scale	34	60.7	61.8	61.8
	Medium scale	15	26.8	27.3	89.1
	Large scale	6	10.7	10.9	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 6: Kind of farmer

It was found that most farmers that undertook the interview are small scale farmers, this can be seen in figure 9.

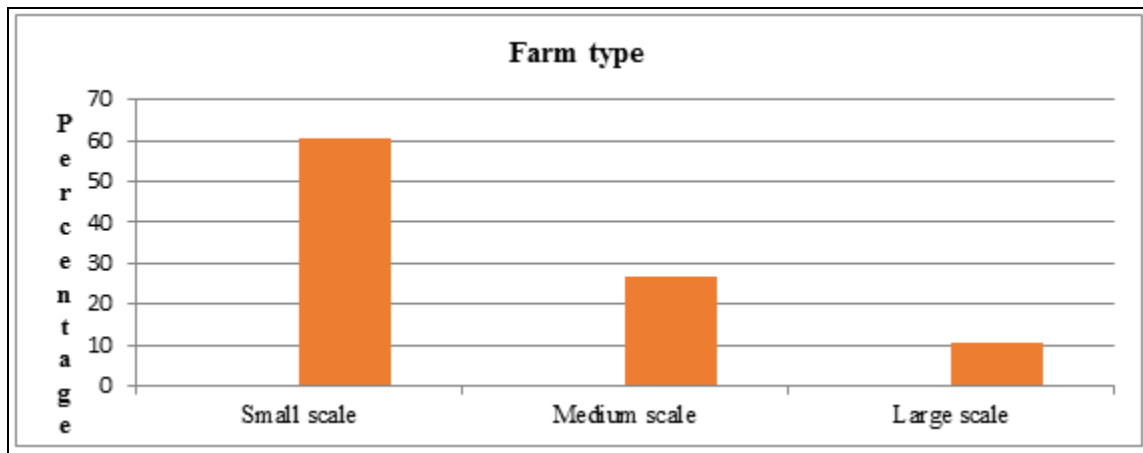


Figure 9: Kind of farmer

4.1.5. Monthly Income for Smallholders

The researcher asked the respondents to indicate their incomes per month and the results are presented in the table 7.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than K500	2	3.6	3.6	3.6
	K500-K1000	8	14.3	14.5	18.2
	K1000-K2000	23	41.1	41.8	60.0
	K2000 and above	22	39.3	40.0	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 7: Monthly income

Most of the farmers that were interviewed said their monthly income is between K1000 and K2000. Followed by those that earn K2000 and above. Very few earn less than K500 as shown in figure 10.

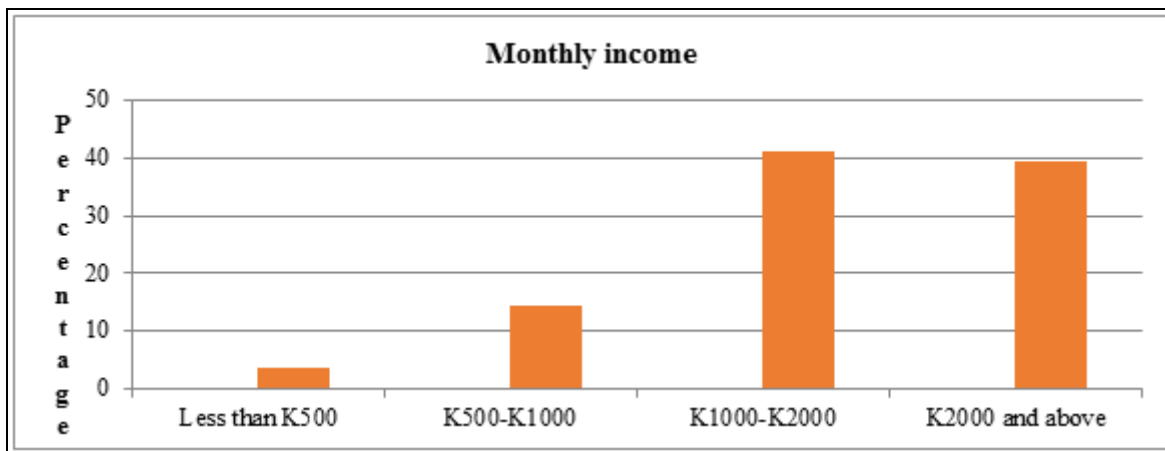


Figure 10: Farmer's income

4.1.6. Type of Production

The interviewees were asked to indicate whether they were in crop production and the responses are indicated in table 8.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	55	98.2	100.0	100.0
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 8: Crop production

Almost all the farmers interviewed were involved in crop production – 98.2%.

4.1.7. Crops Produced by Smallholders

The respondents were also asked to mention the type of crops they grew and table 9 summarizes what they produced.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Maize	14	25.0	25.5	25.5
	Beans	9	16.1	16.4	41.8
	Tomatoes	11	19.6	20.0	61.8
	Soya beans	11	19.6	20.0	81.8
	Wheat	2	3.6	3.6	85.5
	Groundnuts	8	14.3	14.5	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 9: Kind of crops grown

The majority of these farmers grow maize as their main crop, followed by other crops as shown in figure 11.

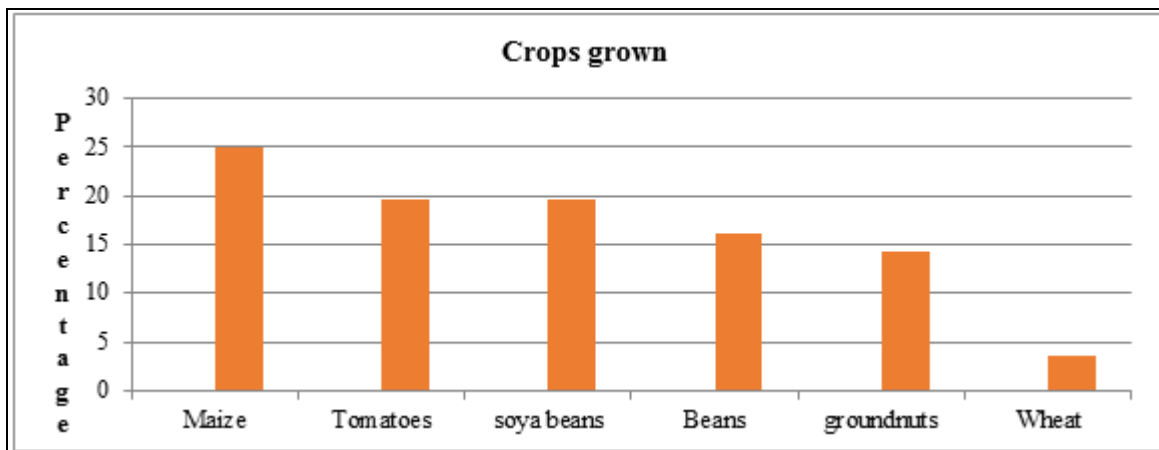


Figure 11: Kind Crops grown

4.1.8. Dependants per Smallholder Members

The respondents were asked to state the number of dependants they had and the responses were shown in table 10.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 5	13	23.2	23.6	23.6
	6-8	22	39.3	40.0	63.6
	9-11	9	16.1	16.4	80.0
	12-14	8	14.3	14.5	94.5
	Above 15	3	5.4	5.5	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 10: Number of household members

The number of household members of most of the farmers is between 6 and 8 as seen in figure 12.

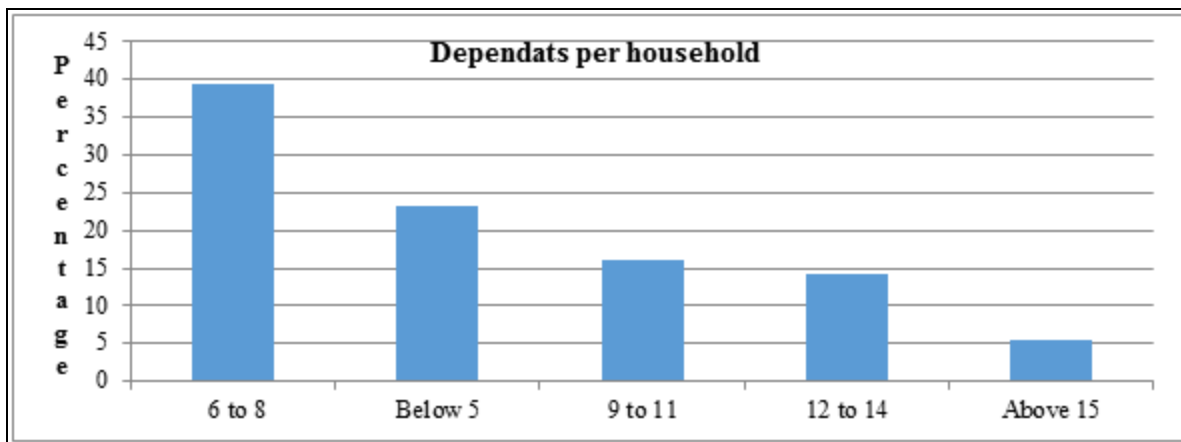


Figure 12: Dependants per household

4.1.9. Farm Size

The respondents were asked to indicate the size of their farms; and answers are presented in table 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a hectare	9	16.1	16.4	16.4
	1-2 hectares	26	46.4	47.3	63.6
	3-5 hectares	11	19.6	20.0	83.6
	Above 5 hectares	9	16.1	16.4	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 11: Farm size

The majority of the farmers said their farmland is between 1-2 hectares as shown in figure 13.

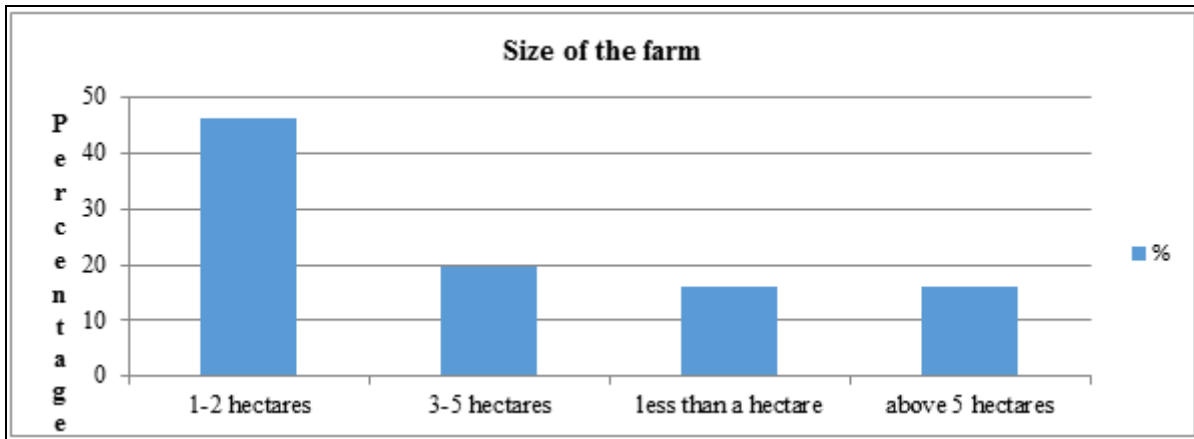


Figure 13: Farm size

4.1.10. The Cost of Inputs

The respondents were asked whether the costs of input were low and the answers are presented in table 12.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	66.1	67.3	67.3
	No	15	26.8	27.3	94.5
	Not sure	3	5.4	5.5	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 12: Lower cost of input

Many of the farmers agreed that the use of the e-vouchers had lowered their cost of input as shown in figure 14 or as reflected in the frequency of those that responded with “yes” in the table 12.

The farmers that responded with “not sure” gave reasons, saying that they have not used the system and so it was difficult to assess whether or not the system lowered their cost of inputs.

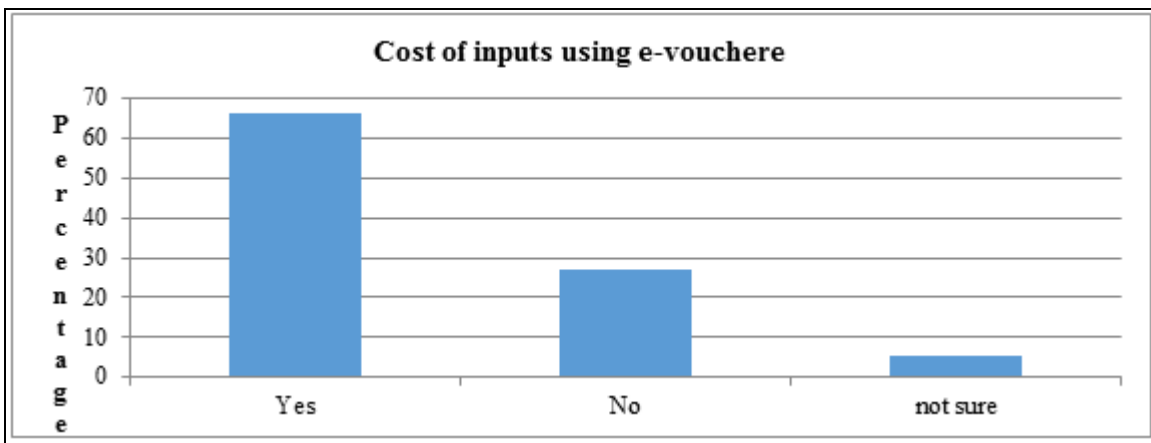


Figure 14: Cost of inputs using e-voucher

4.1.11. Agro-Dealer Participation in E-Voucher

The respondents were asked to indicate whether agro-dealers were participating in the e-voucher system and the responses are presented in table 13.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	44	78.6	80.0	80.0
	No	9	16.1	16.4	96.4
	Not sure	2	3.6	3.6	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 13: Participation of agro-dealers in e-voucher system

According to the interviewed farmers, about 80% agreed that the agro dealers were participating while a few said they were not and other were not sure as indicated in figure 15 or the frequency of the “yes” correspondents in the highest in the above table.

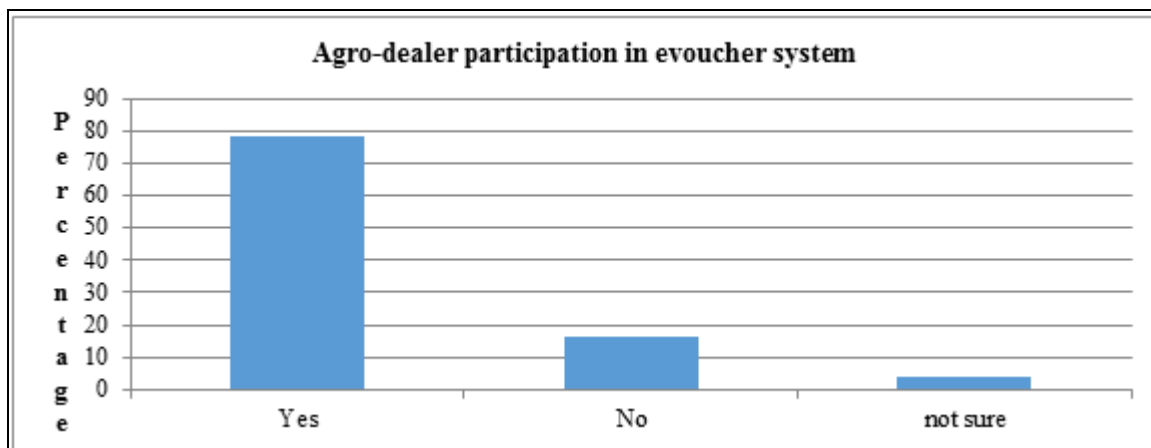


Figure 15: Agro-dealer's participation

4.1.12. Timely Purchase of Inputs

The respondents were asked to indicate whether they were able to purchase the inputs timely and the responses are indicated in table 14.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	64.3	65.5	65.5
	No	19	33.9	34.5	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 14: Timely purchase of inputs

About 64% of the e-voucher holder said they were able to purchase inputs on-time, while about 34% said the opposite, as shown in figure 16.

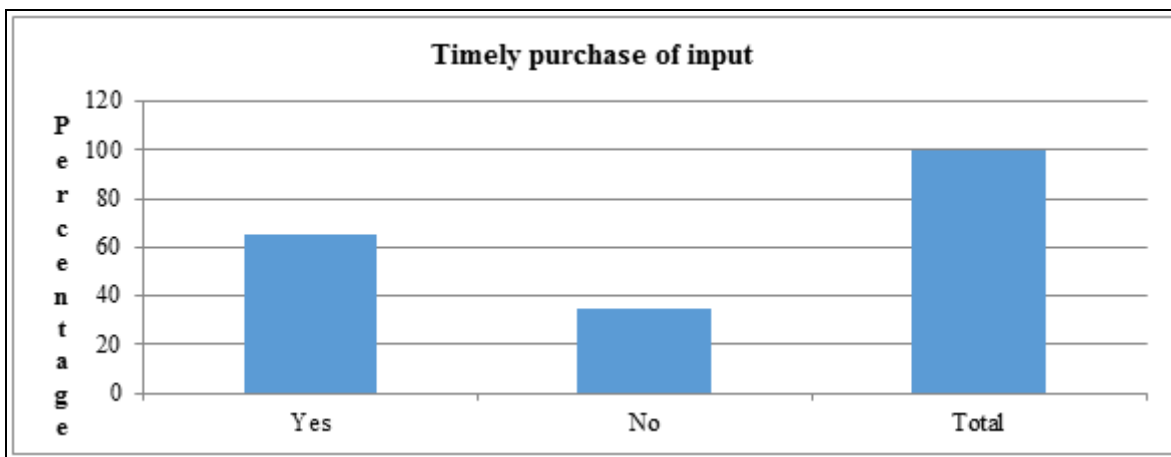


Figure 16: Timely purchase of input

4.1.13. Purchasing a Variety of Inputs with E-Voucher

The respondents were asked to indicate whether using the e-voucher they were able to purchase a variety of inputs. The answers are presented in table 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	40	71.4	72.7	72.7
	No	12	21.4	21.8	94.5
	Not sure	3	5.4	5.5	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 15: Acquisition of range of inputs

The interviewed farmers gave different responses regarding the acquisition of a range of inputs, with the majority stating that they actually do acquire a range of inputs as shown in figure 17.

The farmers that said they do not acquire a range of inputs did not clearly state how that is so.

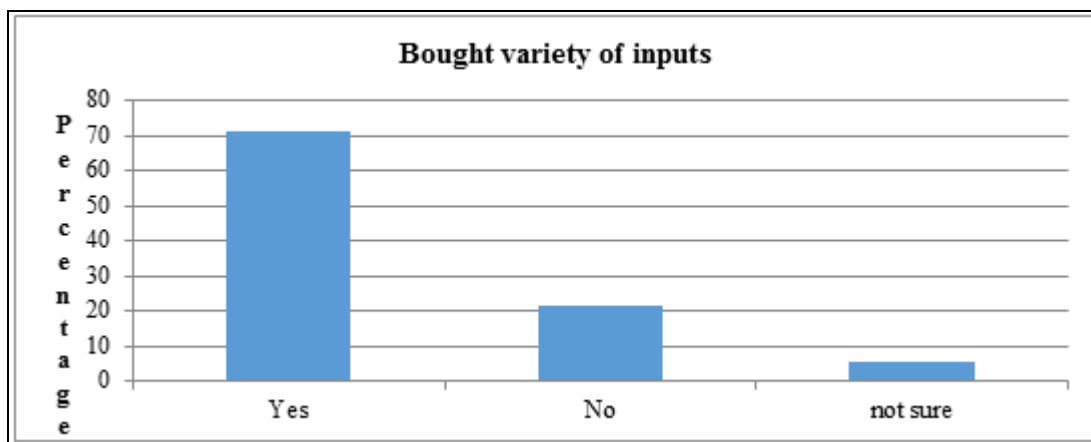


Figure 17: Timely acquisition of inputs

4.1.14. Accrediting Agro-Dealer's Accounts

On whether the agro-dealer's accounts were accredited instantly the transactions were performed, the responses are indicated in table 16.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	33.9	34.5	34.5
	No	19	33.9	34.5	69.1
	Not sure	17	30.4	30.9	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 16: Instant accreditation of agro-dealers' accounts

The number of farmers that responded to the instant accreditation of agro dealers' accounts after every swipe transaction is seen in the above table. The number of those that agreed and those that disagreed is the same as shown in figure 18. For those that were not sure, they mostly stated that they did not have enough information in order to know exactly if they are credited or not.



Figure 18: Accreditation of agro-dealer's accounts

4.1.15. Inputs after Swiping

As to whether the respondents were instantly given the inputs upon swiping the credit card, the responses are indicated in table 17.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	66.1	67.3	67.3
	No	15	26.8	27.3	94.5
	Not sure	3	5.4	5.5	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 17: Always given inputs after swiping

About 67% of the farmers stated that they are always given the inputs after swiping while 27% refused as shown in figure 19. Some farmers said they have to wait to be called to collect the inputs later on.

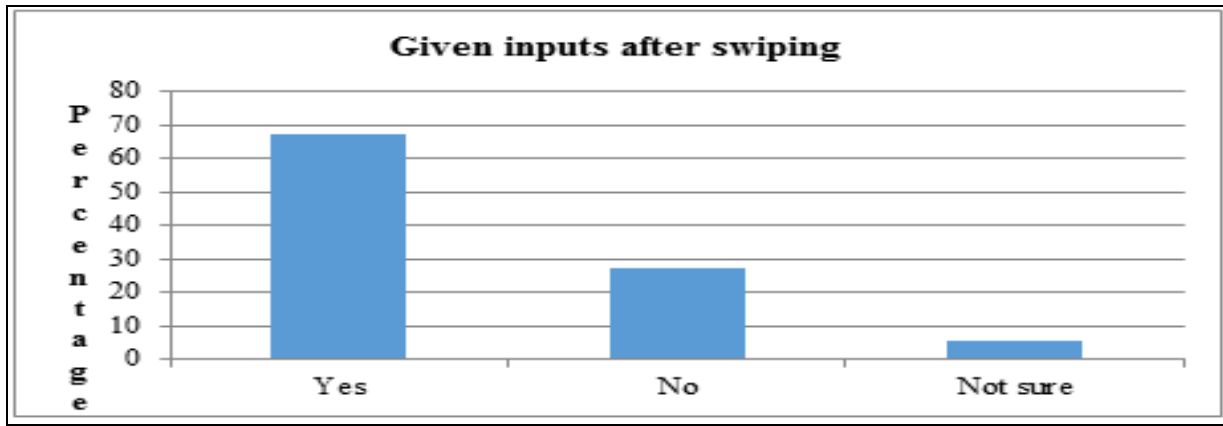


Figure 19: Always Given inputs after swiping

4.1.16. Crop Diversification

The respondents were asked whether they had diversified their farming and the responses are indicated in table 18.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	38	67.9	69.1	69.1
	No	17	30.4	30.9	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 18: Diversification of crops

The majority of the farmers interviewed agreed to having diversified their crop production after the introduction of the e-voucher system as shown in figure 20 or as the yes correspondents have the highest frequency.

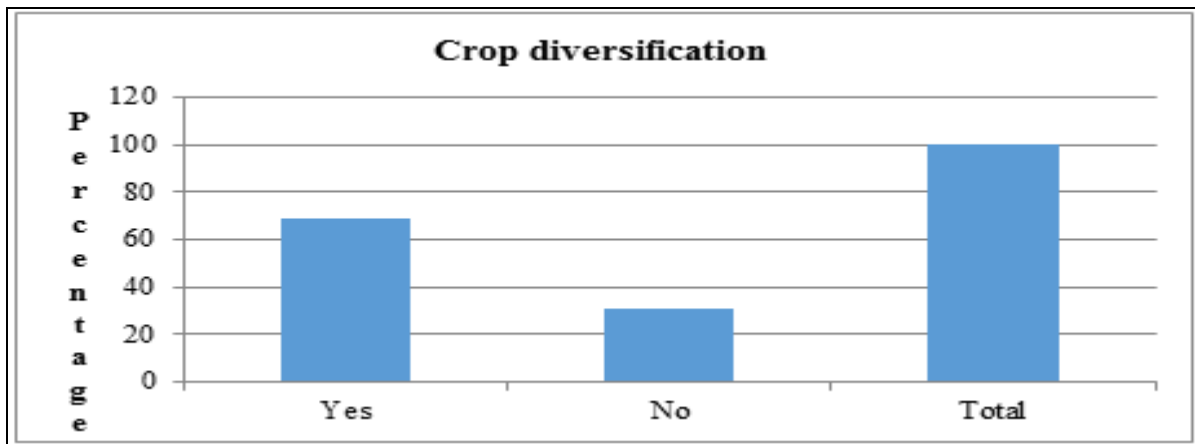


Figure 20: Diversification of crops

4.1.17. Agro-Dealer Right Stocks

The smallholders were asked whether they were able to find all the inputs that they required for farming and their responses are indicated in table 19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	24	42.9	43.6	43.6
	no	28	50.0	50.9	94.5
	not sure	3	5.4	5.5	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		

Source: Primary data

Table 19: Right inputs stocked by dealers

About 43% of e-voucher holders agreed that the agro-dealers stocked the right inputs they asked, while 50 said no and about 5% said they were not sure as indicated in figure 21.

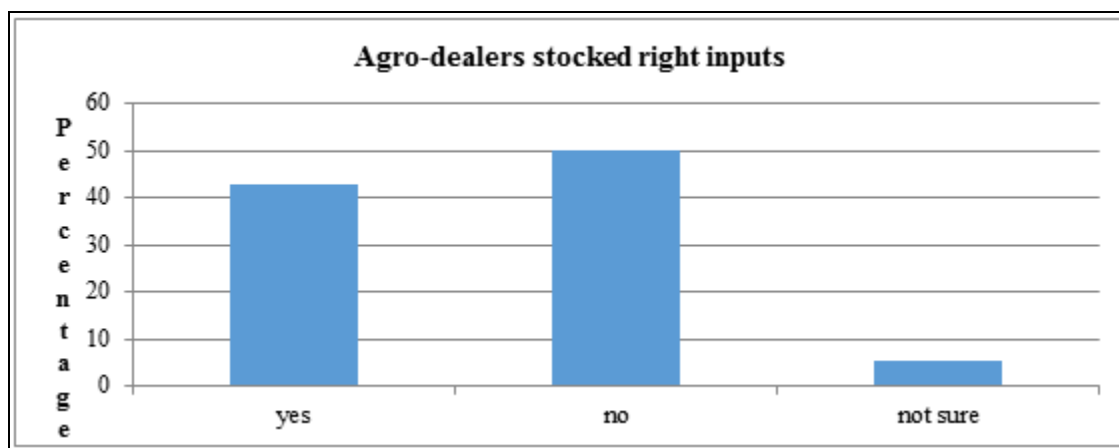


Figure 21: Agro-dealers stocking right inputs

4.1.18. The FISP e-voucher Model

The FISP e-voucher model was presented at 2017 Zambia International TradeFair in Ndola and the Executive Director of The Indaba Agricultural Policy Research Institute (IAPRI) was asked about the e-voucher exit strategy and his response was that there was none. He further advised that the e-voucher model together with exit model should be presented to the Minister of Commerce Trade and Industry for consideration.

5. Discussions and conclusion

5.1. Introduction

The purpose of the discussion is to interpret and describe the significance of the findings of the study in light of what the smallholders felt about the FISP e-voucher system. The reviewed articles – Sitko and Jayne (2014), Sitko et al., (2012), World Bank (2010), MAL (2015), Kuteya et al., (2016 IAPRI (2016), CSPR (2005), advocated the introduction of e-voucher system to mitigate the disadvantages of the FISP manual system alluded to in table 1 of chapter one. This discussion, therefore, is based on the extent to which the findings of this study correspond with the researchers' analogy that are summarized in table 1 and whether the objective has been achieved or the research questions have been answered.

5.2. Discussions of Findings

The findings on key questions are discussed in relation to literature review as follows.

5.2.1. Gender

Gender participation in the e-voucher program shown in figure 6 indicates that 56% were male and 44% were female. This is a good ratio and it implies that the stakeholders involved in the E-voucher model – figure 1, for selecting beneficiaries are doing a recommendable job. A higher level of women's participation in agricultural production should have a positive correlation with food security and nutrition for women are major custodian of families' welfare.

5.2.2. Education

The level of education plays a major role in quality decision-making, understanding better methods of agricultural farming. At the farm level, the level of education for the beneficiaries in figure 6 is adequate, but it is inadequate if they were to be involved value adding enterprise along the agricultural value chain. To ensure sustainability, as part of the exit strategy, graduation or winning off the

beneficiaries, the optimal solution would be to cooperatively own a social venturing entrepreneurship (SVCE) business model enterprise. This enterprise demands a higher level of education than what is obtaining in figure 7.

5.2.3. Type of Farmer

Form literature review, IAPRI Policy Brief 59, only small-scale farmers were supposed to be the beneficiaries. However, figure 9 shows that 60% were small scale, 20% were medium size and 10% were large scale farmers. This requires further investigation as to whether wrong beneficiaries were being selected. Another explanation could be that the farm size owned and the actual farm size under cultivation is different. That is, someone can own a large farm size, but the actual size under cultivation is that of a small scale and therefore qualifies for the e-voucher system. This is what needs to be clarified in future research.

5.2.4. Income Generation

About 80% of the interviewed beneficiaries of the e-voucher system indicated that they were generating an average income of K1000 and above per month – i.e. 41% plus 39% shown in figure 10. This is an indication that the beneficiaries are engaged in crop production than the traditional seasonal crops. This is a sign of diversification as shown in figure 20.

5.2.5. Crop Production

According to table 7, 98% of the interviewed e-voucher beneficiaries were in crop production. This is the basis for one to qualify as beneficiaries of FISP e-voucher system, therefore, it is not surprising that everyone was involved in crop production.

5.2.6. Type of Crops Produced

Figure 11 provides a glimpse of the kind of diversified crops they cultivated. Most of them are seasonal crops and maize, soya bean, beans, g/nuts and wheat featured mostly in that order. Tomato production seems to be second in that order from Maize and was grown throughout the year, providing the smallholders with steady income across the months. This is also evidence of diversification as shown in figure 20.

5.2.7. Cost of Inputs

Among the objectives for introducing the e-voucher system was to bring down the cost of farm inputs because of competition among the private agro-dealers. The fact that in figure 14, 67% agreed that the costs were low and 27% disagreed that the costs were low, is an indication that prices generally reflect market prices. However, according to MAL (2015), the agro-dealers that participate in FISP e-voucher system, are selected and approved by a committee. This means that the e-voucher holders can only purchase inputs from the selected agro-dealers. We can therefore assume that the input supply is a controlled market and therefore assuming that the e-voucher system has lowered the cost of inputs would be pre-mature. Even the notion that the e-voucher system has enabled the participation of private dealers is problematic for those that are not approved are technically prevented from participating in the input supply.

5.2.8. Agro-Dealer Participation

The e-voucher system encourages the participation of private input supply agro-dealers. In figure 15, 80% agreed, 16% disagreed and 4% were not sure whether the agro-dealers were participating in e-voucher system. It is surprising that e-voucher holders, the 16% and 4%, seem not to know whether private agro-dealers are involved in the supply of inputs. As per tradition, the co-operatives where the smallholders belong acquired inputs on behalf of their co-operative members. Where did these get their input? On the other hand, is it a question of lack of education? These questions require further clarification.

5.2.9. Timely Purchase of Inputs

The success of the e-voucher depends the timely acquisition of input supply. Figure 16, indicates 65.5% and 34.5% agreeing and disagreeing respectively that input supply was purchased on time. In agriculture, timely purchase and use of inputs is critical. Any late purchase and application of farm inputs should be avoided at all costs. Thus, there should be 100% timely purchase of inputs, consequently, 34.5% is too high and measures should be put in place to reduce the percentage to 0%.

5.2.10. A Variety of Inputs Purchased

Similarly, the agro-dealers ought to stock a variety of inputs and the e-voucher holders ought also to diversify their crops. Figure 17 indicates that 71%, 21% and 2% agreed, disagreed and were not sure, respectively, that they purchased an assortment of inputs from agro-dealers. The high percentage gives an impression that agro-dealers are indeed stocking a variety of inputs. The 21% could be attributed to the fact that the beneficiary may not get the input immediately, but were requested to come on a later day to correct what they needed. This could be a problem of measuring supply and demand on behalf of agro-dealers that are critical in helping how much to stock at any particular point.

5.2.11. Instant Accreditation

Instant accreditation happens when treasury releases funds early enough and debits the e-vouchers. The fact that, in figure 18, among those that agree, disagree and not sure that the accreditation is instantaneous, is split evenly, is an indication that funds are not released at the same time to all e-voucher cardholders.

5.2.12. Given Inputs upon Swiping

In figure 19, 64%, 27% and 6% agreed, disagreed and were not sure respectively that they were given inputs upon swiping. The 27% who disagreed could be because of lack of funds in e-voucher where by instant accreditation fails as indicated in item 5.12. Alternatively, the agro-dealer may not have the stocks on hand and requests the smallholder to pick the inputs on a later day as indicated by figure 21 where 50% responded that agro-dealers did not have the stocks they required.

5.2.13. Inputs Stocked by Agro-Dealers

Figure 21 indicates 42% agreed while 50% disagreed and 5% were not sure whether the agro-dealers stocked correct inputs. The high percentage (50%) that disagreed could be a function of agro-dealer's inability to measure demand and supply function. Other factors could be those indicated in figure 19 (27%), figure 17 (21%) and figure 16 (34.5%). The study did not cover the agro-dealers. As such, their point of view was not taken and is a limitation.

5.3. Conclusions

The study objective and research question were to assess the performance of the FISP e-voucher system and what are the smallholders saying or feeling about the e-voucher respectively. The research has answered the research question, thereby fulfilling the study objective. To the larger extent, the e-voucher system has performed well going by the positive responses alluded to in the findings as well as discussions. However, the e-voucher system is still not perfect and requires more time in mitigating the challenges that have been noted in the discussions.

It is difficult to conclude that the e-voucher system has helped in crowding-in private agro-dealers when a committee must approve the participating agro-dealers.

Though the sample size was not large enough for the study to generalize the findings, the study has provided the insight of what is obtaining. A larger sample size covering a larger part of the country is definitely helpful to provide comprehensive recommendation to policy makers.

5.4. Recommendations

The study recommends that the government continue to monitor the e-voucher system in all parts of the country by supporting different researcher's other than the traditional ones to undertaking independent studies. The government shall benefit more from different institutions and individual than relying on traditional researchers. The students can be supported to undertake such studies cheaply, but with good innovative suggestions.

It is assumed that FISP had no graduation or exit strategy for the beneficiaries. Similarly, it is assumed that the FISP e-voucher beneficiaries ought to exit or indeed graduate after three years of using the e-voucher. However, there is no definition for either graduation or an exit strategy. A study needs to be done to define the exit strategy or graduation. If this is not done, e-voucher holders might be prematurely exited.

Similarly, the study recommends for a better sustainable exit strategy that leads to the formation of value adding enterprise along the agricultural value chains by those exiting the e-voucher system. This shall make it possible for the smallholders to participate in agricultural industrialization. Just like various stakeholders have made it possible to actualize the FISP e-voucher model (figure 5), a similar model can be formed to make it possible for the e-voucher beneficiaries to form a value adding enterprise. The value adding enterprise would be a better model for those exiting the e-voucher system. The adoption of the already existing models for value adding enterprises would be recommended (community market for conservation (COMACO) model or social venturing and co-operative entrepreneurship (SVCE) business model – see Siame, 2016c, p. 177 & 179).

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➤ An assessment of the effectiveness E-Voucher system: A case study of Kabwe town

This questionnaire is for academic purpose only. All the information that will be provided will be treated as private and confidential. Feel free to answer all the questions honestly. Your cooperation will be highly appreciated.

Instructions: Please put a tick in the box next to the answer of your choice or write in the space provided as the case may be.

Part A: Bio data

1. Sex (a) Male (b) Female

2. Level of education

(a) Lower primary (b) Upper primary (c) Junior Secondary (d) Senior Secondary
(e) Tertiary (f) None

3. Age

(a) 15- 19 (b) 20-25 (c) 26-30 (d) 31-35
(e) 36- 40 (f) 41-45 (g) 46-50 (h) 51-55
(i) 56-60 (j) 61-65 (k) 66-70 (l) 71 and above

4. What kind of farmer are you?

(a) Small scale (b) Medium scale (c) Large scale

5. What is your monthly income?

(a) Less than K500 (b) K500-K1000 (c) K1000-K2000 (d) K2000 and above

6. Are you involved in crop production?

(a) Yes (b) No

7. What kind of crops do you grow?.....

8. What is the total number of your household?

(a) Below 5 (b) 6-8 (c) 9-11 (d) 12-14 (e) above 15

Part B:

9. What is the size of your farm?

(a) less than a hectare (b)1-2 hectares (C) 3-5 hectares (d) above 5 hectares

10. Has the e-voucher lowered the cost of your input?

Yes No Not sure

Why are you not sure?.....

11. Are the agro-dealers participating?

Yes No Not sure

12. Have you been able to purchase inputs timely using your e-voucher?

Yes No Not sure

13. Are you able to acquire a range of inputs using the e-voucher?

Yes No Not sure

14. Are the agro-dealers bank account instantly credited when you swipe the card?

Why are you not sure?.....

15. Are you always given the inputs by the dealer when you swipe the card?

If not, why?.....

16. Have you diversified your crops since you started using the e-voucher?

17. Do you always find the right inputs stocked by the agro-dealers?

18. Do you have an exit strategy for e-voucher?